MFI
Metamodel for Information Models

Keith Gordon
Purpose

Information model expressed in IDEF1X

MFI Core and Mapping

MFI Information Models

Registry

Information model expressed as UML Class Diagram

System A

Interface

System B

Interoperation
Scope

**Within scope:**
- Ellis-Barker notation
- IDEF1X notation
- Information Engineering notation
- Chen notation
- Express-G notation
- UML Class Diagram notation

**Out of scope:**
- Database schemas
- Object Role Modelling
Information Engineering notation
UML Class Diagram notation

- **Order**
  - number : String
  - receivedDate : Date

- **Composite Order**
  - Line items : 1..*

- **Single Order**
  - Line items : 1..*

- **Order Line**
  - number : Integer
  - description : String

- **Other Order Line**
  - comment : String

- **Product Order Line**
  - quantity : Integer

- **Product**
  - code : String
  - description : String

- **Service**
  - code : String
  - description : String

- **Party**
  - number : String
  - name : String

- **Party Role**
  - 0..* 1..1

- **Party Role Type**
  - code : String
  - description : String
The metamodel

ATTRIBUTE
- NON KEY ATTRIBUTE
- KEY ATTRIBUTE
  - NATIVE KEY ATTRIBUTE
  - FOREIGN KEY ATTRIBUTE

UNIQUE IDENTIFIER
- ENTITY TYPE
- ENTITY SUBTYPE
- ENTITY SPECIALISATION HIERARCHY
- ENTITY TYPE ALIAS

RELATIONSHIP
- Relationship End

DOMAIN
- CONTINUOUS DOMAIN
- DISCRETE DOMAIN

VALID VALUE

INFORMATION MODEL

part of

1..1

with instances identified by

0..*

with instances described by values of

1..1

0..*

further defined with

1..1

constraint on

1..1

 assigned with values from

1..1

constraint on

0..*

used as

0..*

known alternatively as

0..*

represented by sequence of

1..1

mutually exclusive with others in

0..*

part of

2..*

in sequence forming

representation of

0..*

1..1

1..1

1..1

1..1

1..1

1..1

1..1

1..1

1..1
Outstanding issues

1) Is it necessary to distinguish between key and non-key attributes?
2) Can the domain concept be used for data types?
3) Is it necessary to recognise that there are sub-domains?
4) Is it OK to handle UML association classes as ‘intersection’ entity types?
5) Do we need to be able to recognise sub-types of UML associations?
6) How do we handle the objects and roles of ORM within this metamodel?
7) Which notation should be used for the metamodel? (What are the WG2 standards)?
8) What are the metaclasses in MFI Core and Mapping?
Any questions?